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10/020,404	12/14/2001	Thomas M. Laney	83682AEK	8712

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EXAMINER

PATTERSON, MARC A

ART UNIT

PAPER NUMBER

1772

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/020,404

Applicant(s)

LANEY ET AL.

Examiner

Marc A Patterson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 32-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species of the claimed invention:

- i. A light diffuser (Claims 1 – 31).
- ii. A back lighted imaging media (Claim 32).
- iii. A liquid crystal device (Claims 33 – 34).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, Claim 1 is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the

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examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

2. During a telephone conversation with Mr. Arthur Kluegel on July 31, 2003 a provisional election was made with traverse to prosecute the invention of i, claims 1 – 31. Affirmation of this election must be made by applicant in replying to this Office action. Claims 32 – 34 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 – 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With regard to Claim 1, the phrase 'size' is indefinite as it is unclear if the voids of each layer are of the same size. For purposes of examination, it will be assumed that the voids are not the same size, and the 'size' therefore defines an average size.

5. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 8 recites the limitation "microvoids" in line 1. There is insufficient antecedent basis for this limitation in the claim.

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6. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 16 recites the limitation "microvoids" in line 2. There is insufficient antecedent basis for this limitation in the claim.
7. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 17 recites the limitation "microvoids" in line 1. There is insufficient antecedent basis for this limitation in the claim.
8. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 18 recites the limitation "microvoids" in line 1. There is insufficient antecedent basis for this limitation in the claim.
9. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 19 recites the limitation "microvoids" in line 1. There is insufficient antecedent basis for this limitation in the claim.
10. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as

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the invention. Claim 21 recites the limitation "said diffuse light transmission efficiency" in line

1. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 22 recites the limitation "said diffuse light transmission efficiency" in line

1. There is insufficient antecedent basis for this limitation in the claim.

12. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 23 recites the limitation "microvoids" in line 1. There is insufficient antecedent basis for this limitation in the claim. Claim 23 recites the limitation "major axis diameter to minor axis diameter" in line 2. There is insufficient antecedent basis for this limitation in the claim.

13. Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 24 recites the limitation "microvoids" in line 1. There is insufficient antecedent basis for this limitation in the claim. Claim 24 recites the limitation "major axis diameter to minor axis diameter" in line 2. There is insufficient antecedent basis for this limitation in the claim.

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14. Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 26 recites the limitation "microvoids" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1 – 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al (U.S. Patent No. 6,057,961).

With regard to Claims 1 – 2, 8 – 14 and 29, Allen et al disclose a light diffuser (film which contains light scatterers, therefore diffusers; column 22, lines 41 – 62) comprising a polymeric film (polyethylene naphthalate, therefore a polyester; column 22, lines 63 – 66) wherein the film comprises a plurality of layers (multilayer, therefore comprising at least two layers; column 22, lines 41 – 62) having a void geometry (therefore having a circular cross section in a plane perpendicular to the direction of light travel; column 22, lines 4 – 14) in which the frequency varies between at least two layers (the number of scatterers changes, therefore arranged in increasing or decreasing size and frequency of voids; column 22, lines 41 – 62). Allen et al fail to disclose a film in which the frequency varies by at least 28% between layers. However, Allen et al disclose a film in which the frequency varies by at least 1% between layers

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(the number of scatterers changes, and is not substantially equal for the two layers; column 22, lines 41 – 62). Therefore, the change in frequency would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the change in frequency, since the change in frequency would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Allen et al, in the absence of unexpected results. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

With regard to Claims 3 and 15, the film also comprises a non – voided layer (skin layer; column 18, lines 47 – 59).

With regard to Claim 4, the voided and non – voided layers are integral (laminated; column 22, lines 41 – 62).

With regard to Claim 5, the non – voided layer further comprises addenda (other non – voided layers (column 18, lines 47 – 52).

With regard to Claim 6, as stated above the voided and non – voided layers are integral; the claimed aspect of two voided layer separated by a non – voided layer therefore reads on Allen et al.

With regard to Claims 16 and 19, the voids contain air (column 22, lines 5 – 14); the refractive index between the thermoplastic material and the voids is therefore greater than 0.2.

With regard to Claim 28, the thermoplastic layer comprises polyolefin polymer (column 17, lines 14 – 22).

With regard to Claims 7, 20 – 27 and 30 – 31, Allen et al fail to disclose a diffuser having a diffuse light transmission efficiency improved by 10% and an elastic modulus of greater than 500 millipascal, and a diffuser having a diffuse light transmission efficiency of greater than 87%, and thermoplastic layers which contain greater than 4 index of refraction changes greater than 0.20 parallel to the direction of travel of light, and voids having an average volume of between 8 and 42 cubic micrometers over an area of 1 square centimeter, and a thickness of less than 250 micrometers. However, Allen et al teach a diffuser in which transmission efficiency is dependent on volume fraction and volume fraction is at least 1% (column 12, lines 60 – 67) having a modulus of at least 1 millipascal (the film has a Young's modulus; column 19, lines 29 – 50) and a diffuser which contains at least 1 index of refraction change greater than 0.20 parallel to the direction of travel of light (column 9, lines 49 – 60) and voids having an average volume corresponding to one – thirtieth the wavelength of the light in the medium of interest (column 10, lines 1 – 16) and a thickness of 625 microns (column 37, lines 46 – 53). Therefore, the diffuse light transmission efficiency, and elastic modulus, and number of index of refraction changes, and volume of voids and thickness would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the diffuse light transmission efficiency, and elastic modulus, and number of index of refraction changes, and volume of voids and thickness, since the diffuse light transmission efficiency, and elastic modulus, and number of index of refraction changes, and volume of voids and thickness would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end

result as shown by Allen et al, in the absence of unexpected results. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

With regard to Claims 17 – 18, the voids are formed by a disperse phase which is crosslinked (column 14, lines 1 – 5) and spherical (core and shell structure, therefore also beads; column 14, lines 14 – 17).

With regard to Claims 30 – 31, Allen et al fail to disclose a particle size of between 0.30 and 1.7 micrometers. However, Allen et al disclose a particle size of one – thirtieth the wavelength of the light in the medium of interest (column 10, lines 1 – 16). Therefore, the particle size would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end use of the product. It therefore would be obvious for one of ordinary skill in the art to vary the particle size, since the particle size would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Allen et al, in the absence of unexpected results. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

Conclusion

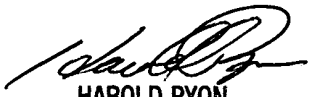
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Patterson, whose telephone number is (703) 305-3537. The

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examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (703) 308-4251. FAX communications should be sent to (703) 872-9310. FAXs received after 4 P.M. will not be processed until the following business day.

Marc A. Patterson, PhD.

Marc Patterson
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HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

8/7/03